

REMARKS

This communication is in response to the Office Action mailed on July 16, 2007. With this Amendment, claims 1, 27, and 35 have been amended. All remaining claims are unchanged. In view of the following, reconsideration and allowance of all pending claims is requested.

On page 2 of the Office Action, claims 1-45 were rejected under 35 U.S.C. 102(e) as being anticipated by Savolainen (U.S. Pub. No. 2002/0126097). Of these claims, claims 1, 18, 27 and 35 are in independent form.

The claims have been amended to clarify selection of initial letters for a word and redetermination of sequences of letters. As discussed below, subject matter disclosed in the present application relates to selecting an initial sequence of letters, without resorting to a multiple-tap approach, and presenting a sequence of letters as the intended word where the sequence of letters are determined as a function of the selected initial letters. In a multi-tap approach, one of the keys is pressed at least once for each letter. For example, on a standard phone keypad, a user could indicate the letter "B" by tapping the number 2 two times. By not resorting to a multi-tap approach and when the intended word does not appear in the list or when the intended word is not in the vocabulary, or dictionary, being used, a more useful manner for selecting words is provided. For example, if the present invention is used in conjunction with a standard telephone keypad and the user presses the number 6 as the first key in the input sequence, the user may have intended either "M", "N", or "O". If the intended word does not appear in the list of possible words, the user may specify the first letter of the sequence as being one of "M", "N", or "O" without resorting to a multiple-tap approach. In this manner, the list of possible intended words would be redetermined using the same sequence of input keys having the user selected letter as the first letter in the sequence. As a result, a more user-friendly approach to entry of words using a reduced keypad is realized.

Savolainen describes a method for entering alphanumeric data. In particular, Savolainen discloses a method of entering text using a reduced keyboard. Vocabulary modules are used to associate a list of possible text outputs given a keyboard sequence inputted by the user. The list contains objects in the vocabulary which match the entered keyboard sequence and are listed in a

selection list according to the frequency of use. To specify individual letters in the sequence, which is especially important in cases in which the intended word is not in the vocabulary modules or related dictionaries, the user uses a multiple-tap (multi-stroke) method in which a key associated with multiple letters is pressed at least once for the intended letter (see FIG. 10, S113). In particular, Savolainen states “[f]or words that are not in the vocabulary modules, a two-stroke or multiple-stroke method may be used to unambiguously specify each letter” (see para 0029). In other words, the multiple-tap method is utilized to enter each letter of the intended word when the word does not appear in the vocabulary modules or related dictionaries. Thus, Savolainen teaches away from selection of individual letters without using a multiple-tap approach.

Independent claim 1 recites a method for selecting an intended word entered using a reduced keypad. Each of one or more keys of the reduced keypad is mapped to a plurality of letters. For an entered key input indicative of pressing one or more keys in the reduced keypad using a single-tap approach in which one of the keys is pressed only once for each letter such that each key press is mapped to only one letter, the method includes determining one or more sequences of letters as the intended word based on a score for each of the one or more sequences of letters. The one or more sequences of letters are presented as the intended word. A user selects the intended word from the one or more sequences of letters without resorting to a multiple-tap approach in which one of the keys mapped to a plurality of letters is pressed at least once for each letter such that a number of times one of the keys is pressed indicates only one letter. The user can indicate without resorting to the multiple-tap approach an accepted one or more initial letters of the intended word from the one or more sequences of letters. The one or more initial letters has less letters than the intended word. Claim 1, as amended, recites redetermining the one or more sequences of letters presented as the intended word “as a function of the accepted one or more initial letters.”

In the Office Action, the Examiner asserts on pages 12-13 that the single-tap approach recited in claim 1 becomes a multi tap approach if a sequence has more than one letter. However, Applicants emphasize that, as claimed, a single-tap approach is one in which “one of the keys mapped to a plurality of letters is pressed only once for each letter such that each key press is mapped to only one letter” (emphasis added). Further, the multiple-tap approach in claim 1 is

recited as one "in which one of the keys mapped to a plurality of letters is pressed at least once for each letter." Thus, in the "multiple-tap" approach, there is a correspondence between one or multiple key taps for one character. On the other hand, in a single-tap approach, there is a correspondence between a single tap of a single key and one character.

Additionally, Applicants note that multiple portions of the specification describe the multiple-tap approach in detail. For example, page 1, line 18 - page 3, line 21 discuss the differences of the multiple-tap approach with respect to a single-tap approach. Further, several portions of the specification describe selecting a word or selecting initial letters without resorting to a multiple tap approach. For example, figures 2 and 3, and associated portions of the written description (e.g., page 15, line 9 - page 20, line 12), describe selecting words that are not present in the vocabulary and selecting initial letters without resorting to a multiple-tap approach. In particular, the second paragraph of page 15 discusses allowing a user to select the word "ioflen" given a numeric key input of 465336 using a reduced keypad even though the word "ioflen" does not appear in a dictionary. Instead of only presenting the words "golden" and "holden" (which are in the dictionary) given the input, the present application allows the user to designate letters and pseudo words outside of a dictionary without resorting to a multi-tap approach (i.e. providing three taps of '4' for 'i', three taps of '6' for 'o', etc.). It is noted that the portions of the specification cited above relating to the "multiple-tap approach" are given by way of example and are not inclusive.

In contrast to the method of claim 1, Savolainen does not enable the user to accept one or more initial letters of an intended word without using a multiple-tap approach in which the initial letters have less letters than the intended word. Further, Savolainen also does not enable the user to accept initial letter(s) to cause redetermination of one or more sequences of letters presented as an intended word as is a function of the accepted initial letter(s). In FIG. 3 and its associated description, Savolainen describes traversing through a list of possible words in a dictionary dependent on user input. Paragraph 0028 states that the user can enter text from a reduced keyboard using only one keystroke per letter. A plurality of letters are assigned to a set of keys such that the keystrokes entered by the user are ambiguous (para 0029). The list of possible words from a vocabulary is presented to the user based on the keystroke sequence. If the intended word is not in

the vocabulary or dictionary being used, Savolainen describes that a multiple-tap method is used to unambiguously specify each letter (para 0029 and 0086; FIG. 10). Step S113 describes that a method other than the multiple-tap can be used, but does not teach or suggest selection of a particular letter or a sequence of letters having less letters than the intended word.

The Office Action specifically points to paragraphs 0028, 0046, and 0064 of Savolainen to describe accepting initial letters from the one or more sequences of letters presented as the intended word. However, these paragraphs deal with selecting an entire word (an entry in the selection list) and not one or more initial letters. In particular, paragraph 0028 discloses that a user can input a keystroke sequence indicative of an intended word. Each key is mapped to a plurality of letters and therefore each keystroke is ambiguous (see para 0029). These ambiguous keystrokes in the keystroke sequence is not acceptance of an initial letter as the keystrokes are associated with multiple letters. As such, this section clearly does not teach or suggest accepting initial letters having less letters than the intended word or redetermining a sequence of letter presented as an intended word as a function of accepted initial letters.

Regarding cited paragraph 0046, Savolainen describes a tree structure for identifying objects from a vocabulary module that correspond to an ambiguous keystroke sequence. The vocabulary module is traversed based on the keystroke sequence and the plurality of letters associated with each ambiguous keystroke in the sequence. A selection list containing the objects identified from the vocabulary module is provided to the user for selection. Thus, this section (para 0046) is discussing acquiring multiple potential words for an ambiguous keystroke sequence. This paragraph simply does not suggest accepting initial letters having less letters than the intended word.

Further, Savolainen states that a user can select one of the entries from the selection list. In particular, in paragraphs 0031- 0036 Savolainen describes the selection lists providing lists of words corresponding to the keystroke sequence entered by a user. A user selects one of the entries by scrolling through the list and using the select key 17 to identify a selected entry. The system posts the selected entry to the text region. As can clearly be seen, an entry selected from the selection list in Savolainen is not “an accepted one or more initial letters of the intended word”

initial letters have less letters than the intended word. Further, selecting an entry from the selection list of Savolainen results in the entry being inserted into the text region (see para 0031-0036) and the keystroke sequence being cleared (see para 0066) selecting an entry is “redetermination . . . as a function of the accepted one or more initial letters” as claimed.

Regarding cited paragraph 64, Savolainen describes determining and displaying objects in a selection list. A user enters a number of keystrokes in a sequence. If a keystroke is the select key (see step S2 in FIG. 3), one of the entries from the selection list is selected and inserted as text. If a keystroke is not the select key, the keystroke is added to the keystroke sequence and objects are identified in the vocabulary module based on the sequence. The objects identified from the ambiguous keystroke sequence are provided in the selection list. Thus, this section of Savolainen discloses adding a keystroke (for example, button “7” mapped to “R P Q”, see FIG. 1) to an ambiguous sequence to generate a list, but does not teach or suggest accepting an initial letter of an intended word.

For at least these reasons, Applicants submit that the cited sections of Savolainen, as well as the entire Savolainen reference, clearly does not teach or suggest accepting initial letters having less letters than the intended word or redetermining a sequence of letters presented as an intended word as a function of accepted initial letters as recited in claim 1. Applicants respectfully submit that the method of claim 1 is neither taught nor suggested by Savolainen and is in allowable form.

Further, Applicants submit that related dependent claims 2-17 are also in allowable form at least based on their relation to claim 1. In addition, Applicants further submit that at least some of these dependent claims are independently patentable. For example, dependent claim 3 presents a sequence of letters not in a dictionary. The Office Action cites sections that correspond to formatting a word in a dictionary (i.e., didnt to didn’t) and adding a word in a dictionary, but does not present a sequence not in a predetermined dictionary.

Further, dependent claims 6 and 7 recites receiving indication of a first letter and a second letter, respectively. Savolainen does not teach or suggest redetermining a sequence of letter taking in to account a first and/or second letter indicated by a user.

It is noted that these are examples of dependent claims that are believed to be independently

patentable.

Independent claim 18 recites a method for selecting an intended word entered using a reduced keypad in which the user, for an entered key input, accepts letters of the intended word. A number of accepted letters is less than a number of letters for the intended word. Sequences of letters are determined as possible intended words consistent with the entered key input and the letters accepted by the user. The accepting of a letter increases the accepted letters by one and is repeated until the user selects one of the sequences of letter presented as the intended word.

In the rejection of claim 18, the Office Action cites Savolainen (figure 3, item S1 and paragraph 44) as showing an element wherein the user accepts a number of letters of the intended word. Applicants respectfully submit that Savolainen does not describe a method of accepting a number of letters of an intended word, but instead accepts an entire intended word from a vocabulary. Paragraph 44 of Savolainen describes the operation of a reduced keyboard system in which the system receives a keystroke input from the keyboard and subsequently adds the keystroke to the keystroke sequence. Subsequently, objects in a vocabulary are identified that correspond to the current keystroke sequence. In this manner, the user, by entering a keystroke, is not accepting a letter of the intended word but is instead adding an ambiguous keystroke to the sequence. The sequence is then referenced to a vocabulary of words, rather than signifying a selection of one or more letters. As described in paragraph 0066, a user selects an entry in the selection list. The entire selected entry is provided in the text region and the keystroke sequence is cleared to begin a new keystroke sequence. As such, Savolainen does not teach or suggest accepting a number of letters that is less than a number of letters for the intended word. In the features of claim 18, a method of allowing users to specifically accept one or more letters in the keystroke sequence and subsequently redetermining the list of possible intended words allows the list to be narrowed based on the selected letters and therefore contain possibilities that may not be in a dictionary.

For at least the above reasons, Applicants respectfully submit that the method of claim 18 is neither taught nor suggested by Savolainen and is in allowable form. Further, Applicants submit that related dependent claims 19-26 are also in allowable form at least based on their relation to

claim 18. In addition, Applicants further submit that at least some of these dependent claims are independently patentable. For example, dependent claim 21 requires that the one or more sequences of letters determined as the intended word comprises at least one sequence of letters for each letter corresponding to a number within the entered key input immediately after a part of the entered key input accepted by the user. This feature is shown on page 18, line 13 through page 19, line 12. Simply put, this ensures that the user is able to select the next letter of the intended word as each letter corresponding to the next keystroke in the input sequence is represented in at least one word in the list of possible intended words. It is noted that this is an example of a dependent claim that is believed to be independently patentable.

Independent claim 27 recites a method for selecting a word entered using a reduced keypad including determining one or more sequences of letters consistent with the entered key input and a numbers of letters accepted by a user. The method further allows the user to accept additional letters less than a number in an intended word, thus causing the list of possible intended words to be redetermined based on the letters accepted. For example, if the user accepts three letters of the intended word and the redetermined list does not include the intended word, the user may accept one or more letters to cause redetermination of the list. Subsequently, the intended word is more likely to appear in the redetermined list. The list is determined based on a probability that the word is misspelled and taking into account an out-of-vocabulary penalty and a first occurrence bonus.

In the rejection of claim 27, the Office Action cites Savolainen (paragraphs 83 and 90) as showing an element wherein one or more sequences of letters are determined consistent with the entered key input and a number of letters accepted by the user. As discussed above, Applicants respectfully submit that Savolainen does not describe enabling the user to accept a number of letters less than a number of letters in a word such that the sequences of letters determined as possible intended words are consistent with the accepted letters. The Office Action further cites paragraph 73 and 74 to describe an out-of-vocabulary penalty and a first occurrence bonus. However, these paragraphs simply describe adding a word or words to a dictionary and does not take into account a penalty or a bonus depending on the sequence of letters. In sum, there is simply no evidence in

Savolainen to support a first occurrence bonus or out-of-vocabulary penalty used as recited in claim 27.

For at least these reasons, Applicants respectfully submit that claim 27 is neither taught nor suggest by Savolainen and is in allowable form. Further, Applicants submit that related dependent claims 28-34 are also in allowable form at least based on their relation to claim 27.


Independent claim 35 recites an apparatus comprising a reduced keypad having a plurality of keys used to enter a key input corresponding to a word and word-determining logic designed to determine one or more sequences of letters as the word. The user can select a word corresponding to the key input from the one or more sequences of letters without resorting to a multiple-tap approach in which one of the keys mapped to a plurality of letters is pressed at least once for each letter. Further in claim 35, the user can accept one or more initial letters of the word from the one or more sequences without resorting to the multiple-tap approach, the one or more initial letters having less letters than the word, to cause redetermination of the sequences of letters presented as a function of the accepted one or more initial letters. Applicants note that, as mentioned above with respect to claim 1, Savolainen neither teaches nor suggests allowing the user to accept one or more initial letters of the entered key input or redetermining sequences of letters as a function of accepted letters. For at least these reasons, Applicants respectfully submit that claim 35 is in allowable form. Further, Applicants submit that related dependent claims 36-45 are also in allowable form at least based on their relation to claim 35.

In view of the foregoing, Applicants respectfully submits that pending claims, namely claims 1-45, are neither taught nor suggested by Savolainen and are in allowable form. Reconsideration and allowance of claims 1-45 are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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